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ABSTRACT

This document describes a project intended to produce and evaluate approximately 50 videocassette based learning modules which would illustrate cultural, social, and psychological aspects of health and illness. The modules were intended for use by medical students as: (1) self instruction, (2) lecture support, (3) trigger films for discussion, (4) immediate playback, and (5) intensive immersion for desensitization. Included in the project description are (1) organizational issues, (2) production techniques and problems, (3) student reactions, (4) guidelines for selection of appropriate modules, and (5) evaluation experiences. Appended is a listing of titles, authors, and producers of project videocassette learning modules. (Author/STS)

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A GUIDE TO THE USE OF MOTION MEDIA IN THE MEDICAL BEHAVIORAL SCIENCES

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FINAL REPORT

HEALTH AND HUMAN BEHAVIOR VIDEO PROJECT

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PREFACE

In 1973 the Fund for the Improvement of Postsecondary Education, DHEW, awarded a major grant to Meharry Medical College, a predominantly black medical and dental school located in Nashville, Tennessee. The grant was intended to produce and evaluate approximately fifty videocassette-based learning modules which would illustrate cultural, social, and psychological aspects of health and illness.

The Health and Human Behavior Video Project was thus created in the first year of the Fund for the Improvement of Postsecondary Education and the ninety-seventh year of Meharry Medical College. That the three year Video Project grant was awarded to Meharry was related to changes which had come about under the new leadership of the College's current President, Lloyd C. Elam, M.D., and Executive Vice President, Ralph H. Hines, Ph.D., respectively a psychiatrist and a medical sociologist. Since 1968 they had moved the curriculum of the School of Medicine toward a greater emphasis on primary practice and team-based models for health care delivery. They had increased the size of the student body and faculty, and completely updated the College's physical plant. The Video Project proposed a marriage of two resources which had been developed in the course of this expansion: a multidisciplinary

faculty in medical behavioral sciences, and an audiovisual production and distribution facility located in the recently completed Kresge Learning Resources Center.

For all its uniqueness as an environment for an innovative instructional grant, Meharry in 1973 was also typical of medical schools across the country as regards certain problems of medical education. There was, for example, widespread dissatisfaction with the training of student physicians in history taking, physicial diagnosis, and interviewing skills. There was concern that behavioral scientists and physicians were teaching in parallel or in sequence rather than collaboratively. There was an increasing recognition of the diversity of medical students as regards their background training in the social sciences, and their level of skill in interacting with people. Finally, there was a defined need to bring to the students' attention examples--from the clinic and community--of specific ways in which personality, organizational, familial, and cultural factors affect the onset of illness, its course and treatment. The obvious way to meet this need was through films and videotapes, yet the visual media available nationally were focused on just a few topics, such as death and dying, human sexuality, and interviewing skills.

Thus the Video Project was built on the premise that if these problems of medical education could be addressed at Meharry, the answers might prove useful elsewhere.

The story of the Health and Human Behavior Video Project can be told in a few statistics. Twenty three faculty members, eleven medical students, and a staff numbering thirteen over the forty month life of the Project developed twenty four films and eighteen videotapes, all but one in color, designed to be used as support materials in the classroom or as teaching/learning packages assigned for medical student use in the media library. Of the total

of forty two video-enhanced instructional modules thus produced, twenty have been adjudged to be of sufficient merit to be released for national distribution. Many of these have been presented at professional meetings, and have received an enthusiastic review.

But the original intent of the Health and Human Behavior Video Project was not just to place a certain number of videotapes in the academic marketplace. The higher ambition was to develop instructional models which would have wide potential applicability in solving practical problems of teaching in the medical behavioral sciences. Therefore the Final Report of the Health and Human Behavior Video Project recounts the effort to experiment with innovative instructional models at Meharry Medical College. By the candid telling of that story it is hoped that others can adapt and build on some of the successes, and avoid some of the mistakes made under this Federal grant.

Because the educational problems tackled by the Video Project were not unique to Meharry, or even to medical schools for that matter, the experience of the Project can potentially be translated into some improvement in the professional education of health workers, especially as concerns the difficult task of helping those workers become more sensitive to behavioral aspects of health and illness. It is to the reader interested in that potential that the Final Report is addressed.

The Health and Human Behavior Video Project would not have been possible without assistance and encouragement from many quarters. The Associate Dean for Administration, James U. Lowe, and the Dean of the School of Medicine, Ralph J. Cazort, were untiring in their support, as were the two Chairpersons of the Department of Psychiatry who served during the life of the Project, William Grier and William E. Coopwood. Frank Perry, Director of the Learning Resources Center, and the staff of the media production facility at Meharry provided practical assistance with professional skill: Joseph A. Pass in

photography, George Card and Lawrence Komp in medical illustration and graphics, Lillard R. Brooks, Wayne E. Miller, and Clarence W. Grist in audio and video engineering, and Paul Dandridge, video systems engineer. The Librarian, Blondell Strong, and the Media Librarians, Ha Wun Sung and Paula Onwudinjo were generous in the time they gave the Project. James Coole of the Office of Educational Science and Henry Vanek of the Office of Dental Education provided on-campus assistance with instructional design. Frank Penta and the staff of the Health Sciences Consortium in Chapel Hill, North Carolina were tremendously helpful in numerous ways. (They are currently reviewing a number of the programs for possible national distribution.) John F. Coffin, in the Grants Office, provided needed assistance in the preparation of reports and in communication with the Fund. Charles Bunting, first and last Project Officer assigned by the Fund for the Improvement of Postsecondary Education, and Grady McGonagill in between, were delightful to work with, and supremely tolerant of budgetary revisions.

The Project was fortunate indeed in the staff it was able to attract, the consultants who served, and the faculty members who authored the programs. Their names are listed in the Appendices, but their creativity and competence can only be appreciated by seeing the videocassettes and films they made. Three of them must be mentioned by name, because their contribution was so great as to have a profound impact on the very character of the Project: Patricia Mitchell, Project Coordinator, Jacob Eleasari, the Production Chief, and Belinda M. Biscoe, Instructional Design and Evaluation Specialist.

There is a large group of persons who cannot be named, but without whom the Project would not have been possible, the actors and actresses, patients, physicians, and ordinary citizens who agreed to appear on camera.

This Final Report was strengthened by numerous suggestions from Lynne Lennox and Charles MacNelly, faculty colleagues with skill in instructional design and a real dedication to quality teaching. It was ably typed by Jacqueline Dennis.

CHAPTER I

A NATIONAL SURVEY OF THE STATUS OF AUDIOVISUAL MEDIA IN MEDICAL BEHAVIORAL SCIENCES

In 1973, the year the National Board of Medical Examiners first included behavioral sciences as a regular component of the Part I examination for medical students (the basic sciences examination), there were few educational resources specifically tailored to the instruction of undergraduate medical students in the behavioral sciences. A few printed texts and readers had become available,[1] yet audiovisual resources in medical behavioral sciences remained concentrated in just a few areas of instruction, such as human sexuality, the dying patient, and interviewing techniques. On most of the vast array of topics covered in the National Boards Part I Behavioral Sciences exam, there were no audiovisual resources specifically designed for medical education.

This fact may have presented less of a problem to the medical school with a large and diverse behavioral sciences faculty, with a media center which could evaluate and adapt materials designed for other audiences for the requirements of medical education. But even in the best of circumstances, the faculty member who wished to locate materials designed for audiovisual instruction in the medical behavioral sciences was faced with serious barriers.

There were only four places to turn for assistance: drug company representatives, the National Medical Audiovisual Center (a Federal agency, part of the National Library of Medicine), the commercial marketplace for purchase and rental of instructional materials, and finally the informal network of professional contacts made at meetings of medical educators. None of these sources was then very satisfactory, for one or more of the following reasons:

--Most catalogs of audiovisual materials did not have a category devoted to "medical behavioral sciences" or to any of the broad subcategories included in the National Boards' behavioral sciences exam ("behavioral biology", "individual behavior", "interpersonal and group processes", and "culture and society").

--A high proportion of the available materials were not aimed at medical viewers. Needed information was often lacking, the level of difficulty was often inappropriate, and as a consequence the student response was lukewarm. Even the most impressive audiovisual materials prepared for nursing, social work, or undergraduate audiences was in danger of being rejected by medical students as "irrelevant" unless care was taken to justify their use.

--Descriptions of audiovisual materials were too brief, and included no reports on the results of peer evaluations.

--Materials were often inadequate from a technical standpoint. Sound or picture were so inferior as to interfere with the instructional process.

--The audiovisual format in which the instructional program was available (tape-slide, videocassette, and 16mm movies being the most common) was not always compatible with the equipment and facilities at the teaching site. Copyright, cost, and technical factors made it difficult to change the format for presentation.

Given the seriousness of many of these problems, medical behavioral scientists sophisticated in bringing off-campus materials into the classroom planned to do so only after expending considerable effort in previewing and evaluating them before use. Materials which did need to be modified for optimum use were thus costly--of faculty time, the librarian's time, the media production facility's time, and money.

Under these circumstances it is not surprising that media oriented faculty often turned to locally produced audiovisual aids for teaching medical behavioral sciences. Audiovisual materials produced at the local medical school, although generally less sophisticated than professional products, have often met with a warm reception. But success was dependent upon a host of factors: the creativity and energy of the faculty member, the quality of the media production facility, and the availability of faculty or staff members with the requisite skills in instructional design.

This was the negative side of the national picture in 1973 as regards the audiovisual media in medical behavioral sciences. On the positive side there were a number of promising developments. For example, the technology of audiovisual production had been improving dramatically, mainly as a consequence of the addition of a new generation of 3/4" color videotape editing and recording equipment and a more sophisticated super 8mm film capability. With competent production personnel it promised to make possible even visually complex instructional programs (with many edits, illustrations, graphics) at a cost of hundreds, rather than thousands, of dollars. What is more, the technical quality could be high enough, even at this lower cost of production, to permit national distribution.

The market for medical behavioral sciences audiovisual materials seemed likely to expand as a consequence of increasing demand for these materials. Not only was there the addition of the behavioral sciences component to the Part I National Boards exam, but increasingly behavioral scientists were becoming involved in the clinical years instruction of primary medical care, and in family practice residency programs.

A move was also getting underway to create a computer based retrieval system, under the auspices of the National Library of Medicine, for information

about all medical audiovisual materials. The plan was to have peer review sponsored by the Association of American Medical Colleges, resulting in a current, accessible, and accurate catalog.

Finally, a series of conferences sponsored by the National Institute of Child Health and Human Development, DHEW, led to the formation of an Association for Behavioral Sciences and Medical Education, a professional association which in its semiannual meetings promised to become a forum for discussion and presentation of audiovisual approaches to learning.

The impact of these several trends was not likely to be translated immediately into a flood of quality medical behavioral science audiovisual materials, however. For there were structural barriers which could not easily be overcome. The evidence which exists[2] strongly suggests that medical behavioral science teaching is organized in a variety of ways; that medical schools still vary considerably in the number and type of behavioral scientists employed; that there are a variety of departmental umbrellas and types of interdepartmental organization under whose auspices instruction occurs; that the amount of instructional time is tremendously variable; and that the boundaries and core content of the discipline are not yet clearly defined.

This diversity is hardly unexpected so early in the life of medicine's newest basic sciences discipline--the only new subject added to the National Boards in more than a quarter of a century. And healthy as the diversity is, from many points of view, it does present marketing problems for audiovisual materials. These problems of the marketplace are complex, but at root they can be reduced to two elements. The first is the need to generate materials whose content, subject matter, would fill an obvious need in the educational program of a sufficient number of medical schools to justify the expense of production and distribution. The second element concerns not the content, but

rather the design of such audiovisuals. There is presently little agreement among faculty members in medical behavioral sciences as to the place of audiovisual materials in the curriculum. Are such materials to be used mainly as assigned self-instructional modules in the media library? To trigger discussion in seminars? As the backbone of an intensive learning experience, such as the Sexual Attitude Reassessment Seminars? As lecture support materials, in the style, for example, of documentaries or cinema verite?

Until there are answers to the above questions there will not be a marketplace of any size. Unless scores of faculty members come to agree on what is needed, and how it can be used, audiovisual materials can be created but they will not be purchased, and actually employed in instruction.

Seen in historical and comparative perspective, such questions of marketing post fascinating problems for the history of science in the latter half of the twentieth century. Why is it that in some disciplines a single textbook can dominate the teaching at the introductory level over the course of a decade (Samuelson's Economics and Janson's History of Art come to mind)? Why is it that some social science disciplines, such as anthropology and psychology, regularly employ the use of film in undergraduate instruction, whereas others, such as sociology and political science, do not? How does one account for the fact that in the course of a few short years a video-enhanced self-instructional textbook[3] has come to be adopted in nearly half the medical schools in the country, in a clinical subject--psychiatry--notorious for its ill-defined boundaries, lack of concensus as regards scientific methods, and controversy with respect to clinical approaches?

The answers to these questions lie at the crossroads of the politics, the economics, and the culture of education. What is certain, from the recent example of human sexuality teaching to medical students, is that it is possible today not only for media to be rapidly developed to meet curricular needs,

but also for the shape of the curriculum itself to be rapidly transformed by the existence of readily available quality audiovisual media.

At the time the Meharry Video Project began, in July, 1973, there were but two sources which reviewed and listed audiovisual resources in medical behavioral sciences, one of them privately printed,[4] the other hidden in the back of a book on another subject.[5] By the winter of 1976-1977 the National Library of Medicine's AVLINE (Audiovisuals on Line) information retrieval system was still in its infancy, although its listing was rapidly growing. A new development on the horizon is the Health Sciences Consortium in Chapel Hill, North Carolina, a national cooperative of health professional schools created to serve as a resource for evaluation, design, and distribution of self-instructional and audiovisual materials, but although it has an energetic staff and an ambitious program, as yet it lists few audiovisual programs useful for instruction in medical behavioral sciences.

In short, the marketplace for audiovisual materials in the medical behavioral sciences remains problematical.

CHAPTER II

THE DEVELOPMENT OF

THE HEALTH AND HUMAN BEHAVIOR VIDEO PROJECT

What follows is a brief history of the Video Project, how it came about, how it operated, and how it related to its organizational environment. Two themes appear in the account which follows. First is the enormous role played by technology in setting the terms of success or failure of the Project. Second is the necessity of amassing enough organizational authority to establish, and then guarantee, the autonomy of internal operations necessary to complete complex human and technical tasks against strict production deadlines.

A. The Need for the Video Project at Meharry.

At the time the Video Project was conceived, Meharry had for a decade been teaching medical behavioral sciences under the auspices of the Department of Psychiatry. Since the reorganization in 1968 of the Department of Family and Community Health, that department also had sought to build a behavioral sciences strength. Between these two departments faculty members had been assembled with expertise in psychology (clinical, developmental, social, and experimental), sociology, anthropology, economics, biostatistics, social work,

epidemiology, psychophysiology, psychopharmacology, and health care administration and planning. In addition, a number of physicians had been attracted to the faculty who brought behavioral sciences sophistication to their research, teaching, and clinical work.

The existing model for teaching medical behavioral sciences involved didactic mass lectures, patient presentations (live, or on videotape, to large or small groups), plus seminars and discussion groups, usually focussed on the lecture, reading materials, or case presented. Behavioral scientists and physicians alike had leadership responsibilities in structuring the curriculum, and participated together in teaching.

For six years there had existed a Division of Behavioral Sciences in the Department of Psychiatry, responsible for a course entitled "Introduction to Behavioral Sciences" (for first year medical students) and another entitled "Introduction to Psychiatry" (second year). The courses included interviewing skills as a content focus, in which medical students learned to take histories and relate comfortably to patients on the wards in Pediatrics, Surgery, Medicine, Obstetrics and Gynecology, Psychiatry, and the Comprehensive Outpatient Clinics. Efforts were made to integrate teaching around a multicausal concept of illness, and around the idea of human development through the life cycle.

Nonetheless, and despite an attitude survey which showed that Meharry students had a greater receptivity as freshmen to learning about behavioral and community aspects of medicine than medical students elsewhere, students complained of a lack of clinical relevance in the presentation of didactic materials, a lack of integration across behavioral science disciplines, and a lack of unity between the interviewing and more didactic sequences. Students appreciated the early patient contact in the interviewing sequence, but they pointed out that interviewing was taught in the first year by behavioral scientists,

and in the second year by physicians, with little effective coordination between the two.

Prior to the development of the Video Project proposal there had been experimentation with the behavioral sciences curriculum. Videorecordings of patients were made, and were well received. Students routinely participated in formal and informal course evaluations, and in consequence the faculty worked on improving the correlation among behavioral objectives, curriculum content, and exam questions. Joint teaching of the first year course between the Department of Psychiatry and the Department of Family and Community Health was attempted and abandoned. Students were involved in the preparation of instructional goals and materials. One medical student, with minimal supervision, made a videotape on "The Suicidal Patient" which received an enthusiastic welcome when presented in class.

Through all this experimentation the basic structure of the behavioral sciences coursework remained a serial presentation by a variety of faculty representing differing medical and behavioral science specialties, in a didactic mass lecture format with parallel reading assignments and small group discussions. Little account was taken for the students' varied learning styles, backgrounds, or levels of interest.

B. The Design of the Video Project.

The Health and Human Behavior Video Project was intended to experiment with the creation of instructional materials and models which might overcome many of these difficulties--difficulties unique in content to Meharry, but similar in form to those encountered in medical schools across the country.

The concept called for the creation of videocassettes, each of which would be accompanied by an instructional guide, to make it possible for students

to master the needed materials on their own time, at their own pace, in the media library. The design of the cassettes and the guides was to take place with the close collaboration of medical students, who would assess the progress of each program as it developed, providing suggestions for revisions as needed. Cassettes would be developed only if there was a defined need in the curriculum, and then only if a "creative conference" of medical students and staff members agreed that the idea was sufficiently visual as to merit the effort required. The final ingredient in the originating concept of the Video Project was that the videocassettes and accompanying guides would be formally evaluated, not only individually, but as they appeared in the curriculum, in their instructional context.

Thus the Project did not presume to evaluate whether learning models using the self-instructional format were superior to the traditional lecture-plus-small group format. It was proposed from the beginning that the two approaches are not mutually exclusive--that indeed a media library assignment may be the precise functional equivalent of a textbook chapter or an article assigned as outside reading, resulting in a situation where self-instruction and other methods are combined.

The Project also did not presume that the creation of the videocassettes would in the short or long run save faculty time. Quite the contrary, it was anticipated that there would be a huge investment of faculty energies in the creation of the new materials in the first place, and that these materials might in turn lead to greater student demand for tutorial time.

And the Project did not assume that all behavioral aspects of health and illness can or should be taught in the self-instructional format, or that videorecording is a panacea. Certainly medical students would need to continue to interact with live patients on the clinical services and in community settings, and some students and faculty alike would continue to use--and prefer--the more traditional instructional approaches. The question was what kinds of

content would most effectively be taught using the videocassettes? How would the video-enhanced teaching/learning packages best fit in the curriculum?

C. How the Project Was Organized.

The grant proposal as approved called for the production and evaluation of approximately fifty videocassettes over the period from July, 1973, through August, 1976. The original notion was that the necessary production personnel would be added to the existing staff of the Instructional Television (ITV) Section of the College's Division of Biomedical Communications, and that the vast majority of the programs would be based on remote television production, with the balance in the more costly 16mm film format.

Faculty were to be recruited to participate from any department in the School of Medicine, the departments to be reimbursed dollar for dollar for time faculty members expended with the Project. There was to be a full-time Project Coordinator and a full-time Instructional Designer and Evaluator, to knit together the efforts of faculty members, production staff, and students. The schedule called for six months of planning, to be followed by eighteen months of production, and then a year and a summer of evaluation and revision.

A national advisory council was to be formed, composed of prominent medical behavioral scientists and an expert in educational audiovisual production. In the third year there was to be experimentation with the use of the videocassettes in varying instructional contexts, with a quasi-experimental approach to the study of the effectiveness of entire series of videocassettes.

The actual organization that was constructed looked little like the blueprint. The first difficulty encountered proved to be the most costly, absorbing enormous amounts of energy as well as time and money. For the fact was that the newly installed TV capability in the Learning Resources Center was not able to produce color TV programs of a technical quality which would

permit national distribution. The equipment had been installed, the ITV staff hired, just prior to the time the Video Project came into being. The building itself was new, and though there was ample space for production, that space was located on the top floor immediately below noisy air conditioning units. This resulted in sound pollution which might be costly to overcome, but consultants indicated that this was the least of the problem. For the TV system was not engineered to meet the needs of the Video Project. The whole emphasis of the Project was to be on remote, rather than studio production, and the existing system, even if finely tuned, could not be transported about the hospital or the community.

Once the dimensions of this problem became clear, it was obvious that the Video Project had to make a fundamental choice. The original grant had called for the purchase of a limited amount of motion picture equipment, and the question was now whether to abandon all plans for 16mm cinematography and use the limited funds to try to create a remote TV capability, or to plan to do remote work on film, later converting the film to videotape.

The decision was taken to purchase the 16mm equipment, and to hire a production staff experienced in film production as well as TV. This decision meant that the Video Project could begin production immediately, but it also led to an organizational crisis. Would the new staff hired be located under the wing of Instructional TV, since the product, ultimately, would be videocassettes (as called for in the original grant)? Or would the new staff form a separate production unit and work exclusively on meeting the Video Project's objectives?

At just this juncture--halfway through the first year of the Project--there were heavy demands to begin actual production just as soon as possible. Promises had been made to faculty members and to Washington, and a newly appointed chairperson in the Department of Psychiatry was asking who was to

be accountable for meeting production deadlines. He was insistent either that the Project be completely disassociated with the Department of Psychiatry, or that he, as chairperson, would have the necessary authority to assure that the Project could produce quality products, according to schedule. In consequence, the Health and Human Behavior Video Project was reorganized as an autonomous unit under the auspices of the Department of Psychiatry, the department with the largest number of behavioral scientists on its faculty, and the academic home of the Project Director.

The results of this move were far reaching. The Video Project production crew quickly established a reputation for considerable talent and productivity. At about this same time, after a year of efforts to make the College's TV studios operational proved fruitless, the ITV staff was for the most part dismissed, leaving only a skeleton crew. It was not until halfway through the third year of the Video Project grant that Meharry had an operational color television capability, made possible through the purchase by the College of a new generation of 3/4" equipment and the hiring of a video systems engineer. Inbetween, with the exception of one black and white production, the Video Project rented commercial or public television studios by the hour, and made 16mm films. This increased the average production cost for video-enhanced teaching/learning packages, both in actual dollars expended and in staff time. For much of the life of the Project the film editing console was in use sixteen hours a day. But the unavailability of on-campus color television also lent a certain glamour to the Project, since the products which resulted from its efforts were highly polished and professional.

It was perhaps this last factor, together with the strong support of the academic administration of the Department of Psychiatry and the School of Medicine, which led to a high level of participation from many of the most effective faculty, physicians and behavioral scientists alike. In all, eight

departmental chairpersons or division heads became authors or coauthors of programs, and there was no dearth of faculty interest in participating in the Project.

It was also the participation of medical students in the Project which made possible the successful completion of many of the programs. Students worked by the hour through the regular academic year, and full-time on stipends in the summer months. They provided every kind of production assistance, from sound and lighting to making title cards and doing still photography. But mostly they were engaged in reviewing scripts and completed films and videotapes, writing instructional objectives and posttest questions, and otherwise working closely with the faculty members and evaluation staff to make the programs as effective, and as pleasing as possible. Often, because of the close relationship between students and faculty members in a medical education setting, students could communicate suggestions for improvements to faculty members in circumstances which would have been delicate, or awkward, for Project staff members. Because students identified closely with the aspirations of the Project, many faculty members became involved, and completed programs, who might not otherwise have done so.

It is difficult to assess what might have been if the Project, early in its life, had opted to place all its resources behind television production, thereby abandoning the film medium altogether. The organizational competitiveness and rivalry between the Video Project crew and the College's other audio-visual production personnel, which waxed and waned as a source of frustration on both sides, might thereby have been reduced. The production crew would likely have come closer to, or exceeded, the goal of "approximately fifty" completed instructional packages, but only if the presence of the Project's resources had led to an immediate resolution of the many television engineering

problems. Patients, actors, actresses, and faculty members undoubtedly would have felt far more comfortable "at home" in a TV studio located in a university setting, rather than in the cavernous and threatening commercial studios which were rented for many of the productions instead.

Expensive as the decision was to commit the limited equipment funds of the Project to 16mm film, the alternative was to risk that the College's TV capabilities would not be able to meet the demanding technical requirements of the Project on time. Without the remote production capability, the very purpose of the Video Project--to bring the community and clinic into the classroom to illustrate behavioral aspects of health and illness--could not have been fulfilled.

Ironically, the decision to begin remote production in film ultimately permitted the College to delay repairing the TV system until a new generation of cameras, recorders, and editing equipment was available in the marketplace --better quality, more portable, and less expensive than could have been purchased in the first year of the Video Project.

D. The Production of a Typical Video-enhanced Teaching/learning Package.

Early in the life of the Project a campaign was initiated to make the fact of its existence known. Brochures were prepared for all faculty members, the Project Director and Coordinator made announcements at School of Medicine and departmental faculty meetings, and the Project solicited ideas from departmental chairpersons concerning priority needs in the curriculum. It early became apparent that the production process would have to be structured tightly enough to permit some form of administrative control and oversight. But the very notion of the Project called for experimentation and creativity, and these, in turn, made it necessary for the Project's administrative structure to be flexible. In practice, this meant planning to husband enough resources

to allow ample time and money for making needed revisions, not only in the content and design of the video-enhanced instructional packages, but also in the process of production.

What follows is a brief discourse on the typical steps taken in the course of production.

1. Idea Development.

The faculty member worked with a staff member from the Video Project to focus an instructional idea around the needs of a student population at a certain level, in a certain course. Usually the faculty member was already teaching the subject to medical students, and had proposed that a self-instructional or video-enhanced format would make learning more enjoyable or efficient. The faculty member, with the assistance of the staff person, utilizing the principles of instructional design, developed a broad statement of goals and an idea of how these might be realized using film or television. At this stage specific instructional objectives were included only if the faculty member felt they would help the staff and medical students at the Creative Conference understand better what was intended.

2. Creative Conference.

This was an informal meeting of the faculty member with the production and evaluation staff and a few medical students to go over the ideas for the production and to be as creative as possible in developing these ideas to make a sound educational package. All the participants had a chance to review the faculty member's proposal at least a day before the conference. The creative conference typically lasted an hour and a half or two. It resulted in a staff review, usually the next day, in which a decision was taken whether or not to proceed with production. If the decision was favorable, a staff member was assigned as a producer. If the decision was unfavorable, then a letter spelling out the reasons--technical, lack of resources, concept not suitable to visual media, etc.--was sent to the faculty member.

3. Faculty Contract.

Following the successful conclusion of a creative conference a contract was drawn up stipulating the objectives, the plans for when the program would be produced, and the estimate of how much time the faculty member would need to anticipate spending on the project. This contract was reviewed by the Project Director, the faculty member, and the chairperson of the department concerned.

4. Script Development.

The producer assigned to help the faculty member worked, usually with a student, to develop a story board or script, and to draft posttest items and the written materials to be included in the instructional guide, since all programs would ultimately be placed in the media library.

5. Pre-production Review.

Medical students were assembled and asked to review the entire plan and to give comments and suggestions before arrangements were made to produce the program. Serious objections from students resulted in the production being delayed until the objections were overcome. The Project's specialist in Instructional Design and Evaluation supervised this review, and made certain that attention was paid to instructional objectives.

6. Production.

The staff member who served as producer became the team leader of the Video Project production staff, reviewing work periodically with the Production Chief. The faculty member at this stage was often asked to give advice, and review work and editing as completed.

7. Intensive Evaluation.

Once the entire package was completed to the satisfaction of the faculty member and the Production Chief, it was submitted to a panel of students, evaluated, and either returned to the producer for revisions as needed, or copied and made available to the media library. At this stage the students' evaluation consisted in several distinct tasks--taking a pretest covering the didactic content contained in the package, working through and watching the videocassette as many times as desired, taking a posttest, and then discussing the experience in the presence of a tape recorder and the Instructional Design and Evaluation Specialist. Pretest and posttest scores were calculated and compared, and an item analysis was conducted to identify poorly constructed test questions, and/or poorly developed ideas in the program itself.

8. Distribution.

Completed packages made available to the media library could be used by individual students or checked out and presented in the classroom by faculty members. Films were stored in the Video Project's editing room and also made available. Each student who viewed the package in the media library was asked to turn in an evaluation form, and these were analyzed periodically. This analysis played an important role in determining which of the programs would be considered for national distribution.

E. The National Advisory Council

Since the aim from the beginning was to distribute nationally those video-enhanced instructional packages which met with the most favorable response, a National Advisory Council was formed to offer periodic review and guidance, to keep the Project attuned to developments on the national scene. The Project obtained the services of a distinguished group of persons (see the Appendices).

They provided many individual consultations and one formal review, and these served to help establish guidelines, both technical and in terms of content, according to which the packages would be considered for national distribution. More fundamentally, in the course of their consultations the National Advisory Council gave strong encouragement and reinforcement to the staff of the Project, and this provided an incentive to redouble the production effort and keep spirits high.

The National Advisory Council, which assembled in the spring of 1975, made a thorough review of the production process and came to the conclusion that in the absence of an operational television studio on the Meharry campus in the very near future, the Project would not be able to meet production deadlines or goals. This warning was in turn communicated to the Meharry administration, in a last ditch effort to interpret the need of the Project to begin those on-campus television productions which had been postponed again and again. When in the winter of 1975-6 color television did become a reality, as the National Advisory Council had predicted there was insufficient time remaining for the Video Project staff to learn to utilize it to its full potential. In consequence, television and film production continued right through the summer of 1976, and into a sixty day extension granted the Project by the Fund for the Improvement of Postsecondary Education.

CHAPTER III

MODELS FOR USE OF AUDIOVISUAL RESOURCES IN MEDICAL BEHAVIORAL SCIENCES

For the past three years the Health and Human Behavior Video Project at Meharry Medical College has been experimenting with the development of films and videotapes intended primarily for the preclinical medical student. The Video Project gave wide lattitude to faculty members and production staff in establishing not only the content, but also the pace and style of the films or videotapes created. Although all programs were designed to be made available to students in the media library as videocassettes with an accompanying instructional guide, many were also intended for use in mass lectures or small group discussions. Consequently, over the course of the Project, it was possible to take a single audiovisual program and experiment with its use in several alternative educational environments.

In brief scope, this experience suggests that faculty members need to be concerned not only with the quality of the content of educational motion media. They also need to anticipate the response of students since motion media can induce boredom or sleep, or can have a profound impact, positive

or negative, on the students' learning. Faculty members also need to consider the fit between the audiovisual program and the specific learning environment, or context, into which it is placed. The present chapter presents a discussion of several of the factors to be considered.

A. Five Models for Introducing Audiovisual Materials Into the Curriculum.

Although there are any number of possible ways of introducing audiovisual resources in the medical behavioral sciences curriculum, the range of alternatives can be suggested by presenting five models. These are all currently in use in medical schools in the United States. The list is not exhaustive; the several models presented are not all mutually exclusive. As will be seen below, two or more of the models may effectively be used in combination.

1. Self Instruction.

Films or videocassettes which are self contained, self explanatory, either in themselves or when accompanied by print medium guides, are available in many formats. The most elementary simply requires the student to stop a videocassette periodically to check whether or not the material presented has been mastered. The more ambitious self instructional audiovisual materials may contain many hours of videotape and whole workbooks of objectives, text, and test materials.

2. Lecture Support.

Taped or filmed case presentations and documentary films are the most commonly used lecture support media. The classroom lecture can be supplemented by the introduction of complementary motion media either to reinforce or to illustrate the instruction. The presentation may occur in class time, or it may be made available to students in the media library, but as lecture support material it does not stand on its own.

3. Trigger Film or Tape.

A brief visual stimulus (usually thirty seconds to three minutes) is presented in order to provoke classroom discussion. It generally shows some conflict situation which students, under the guidance of an instructor, seek to understand, develop, or resolve. Several short film or videotape triggers may be assembled which constitute variations on a theme. The size of the class is ideally small enough to permit discussion by most students.

4. Immediate Playback.

This model puts the student, faculty member, or production crew member behind a video camera which records students role playing, interviewing actual patients, taking histories from "programmed patients" (actors, or trained subjects), etc. The tape is then played back for immediate review. Nonverbal communication is one of the subjects most effectively taught using this model. It is also used to help improve interviewing and history taking skills.

5. Intensive Immersion.

The technique of flooding students with motion media is widely used in "desensitization" of medical students in human sexuality teaching. The effect is created by presenting many films serially in a compressed period of time, or, if the content is highly visual and easily divorced from the sound track, simultaneously on multiple screens. Film festivals can be used to generate the same effect, and have been tried on such topics as death and dying.

B. Variations and Combinations.

Depending on the available audiovisual facilities and the imagination of the instructor, there are a number of innovative teaching methods which employ motion media but build on one or more of the five models listed above.

1. Trigger Tapes Made In Class.

This combines elements of the immediate playback and trigger tape models. A camera and videorecorder/playback unit are brought into a classroom, or the class moves into a TV studio, and students enact skits designed for trigger tapes. These are recorded and then immediately played back and discussed. An obvious advantage is that the students who appear on tape can be asked to share their feelings and thoughts as they enacted their role in front of the camera, adding a personal dimension to the discourse.

2. Group Assigned Self Instruction.

This approach is a variation on self instruction at the individual level. Students are requested to view the self-instructional materials in assigned groups, and the media library places a video playback unit and monitor in a conference room suitable for the purpose. Students listen to the videotape on which the self instructional program is based and are encouraged to discuss the content of the program with one another in the absence of the faculty member. This method has been used to present highly emotional or controversial materials, since it allows students to decathect, discharge energy and emotion, in their own peer group before class time begins. As a variation, a trigger tape may be assigned in this fashion,

with the students asked to report in class on the highlights of the discussion their group held in the media library. The discussion can then continue in class time, under the instructor's guidance.

3. Faculty Precepted Self Instruction.

A videotape monitor can be brought into class, and the students assigned the task of completing the self-instructional materials in front of the instructor. Although there is always a somewhat annoying delay while stragglers complete the posttest items or the self-evaluations which appear in the midst of the self-instructional program, this method has distinct advantages. First, having just seen and worked through the program, both faculty and students find it fresh in mind. Second, difficult or especially interesting passages can be reviewed in the presence of the instructor, as needed. Those students who wish to take still more time to master the materials can be encouraged to do so on their own time, in the media library. Thus this approach combines attributes of the lecture support and self instructional models.

4. Segmented Teaching.

This is similar to the trigger tape, except that the brief motion media presentations are arranged to build a narrative with an instructional purpose. The segments of videotape are each discussed by the class serially, with the faculty member facilitating and filling in additional information as needed. Rather than conflict ridden content, actual documentary footage with a didactic flavor is more suited to segmented teaching. But unlike the use of the documentary as lecture support material, it is presented in a series of digestible bits.

5. Intensive Self Instruction.

Students are given a heavy assignment of self-instructional programs on a particular topic or theme, and are told they will be examined over the contents at the beginning of the next class hour. The rest of the class time after the quiz is then spent discussing the materials which were assigned. At least a full weekend should be allowed to complete the assignment.

All of these methods have been tried, with varying degrees of success, in behavioral science teaching at Meharry Medical College. Most of them represent adaptations or direct adoptions of methods in use in other medical schools. For example, the segmented teaching method was borrowed from the Pennsylvania State University Medical School at Hershey, where it is used successfully by Professor David Hufford, a specialist in health folklore.

C. Some Pedagogical Considerations.

An effort was made under the auspices of the Health and Human Behavior

Video Project to vary the instructional context, the learning environment, for presentation of a single motion media program to medical students. This effort might be characterized as "informal experimentation" since it was not accompanied by the rigorous controls and careful measurement which would have been required by a genuine quasi-experimental research design. Informal experimentation was undertaken with the aim of heightening awareness of the variables which would need to be considered in any more systematic evaluation effort. These same variables can also be examined logically, pragmatically, from the standpoint of pedagogy, and it is in this spirit that the following discussion is presented.

Four types of variables have been identified and will be discussed in turn: those related to the style and content of motion media, to the manner of their presentation, to the characteristics of students, and to the instructional context.

1. Variations in the Style and Content of Motion Media.

Most educational films and videotapes seem inherently to move in one of two stylistic directions. The first is the didactic, narrative, linear, and emotionally cool presentation which makes ideas explicit, relies heavily on verbal communication, and requires the viewer to pay close attention to the logic of the message. The alternative is the non-narrative, highly visual and emotionally warm presentation. It evokes in the viewer an open-ended response, and stimulates discussion. The material presented employs the viewer's own fantasy life and imagination to achieve its end, and consequently it tends to imply that the viewer's response will depend less on what he or she knows than on what is felt, experienced. Simply put, it calls upon the viewer to make a personal response, over and above any intellectual response which is present. It may call forth a new sense of dedication or commitment, a new level of awareness.[6]

These are polar types, and in reality they are often combined in various ways. To the degree that one of the two poles is approached, however, the faculty member will need to vary the instructional context accordingly.

What is meant by this is that students need to be afforded an opportunity to express their joy, anger, anxiety, or grief in class time, or at least to share their feelings in verbal discussion, or in some other manner be allowed to discharge the emotion generated by media of the emotionally warm style before an effort is made to discuss the experience didactically.

An example may illustrate the point. Sick Call is a 28 minute documentary style film about a prison dispensary.[7] It contains elements of cinema verite: the viewer gets the feeling that he or she is there, the camera and lights and microphones are forgotten by the prisoners and guards and viewers of the film alike. It was made to teach about the influence of organizational context on the doctor/patient relationship. When first evaluated by students it was seen on a videocassette in a lighted room. An instructional guide containing a difficult narrative and pretest and posttest questions accompanied the videocassette. Students completed the instructional guide with some difficulty, and gave the videocassette and guide together good ratings.

This experience left the instructor totally unprepared for what happened when Sick Call was first presented in class. There was no accompanying instructional guide. A discussion class of thirty had assembled to see Sick Call as film. The class was crowded into a comfortable, theatre-like viewing room, and the lights were turned completely out while the film was running. When the lights came on the instructor tried to lead the class in a discussion of the impact of the prison as a complex organization on the doctor's relations with his inmate/patients, and he found it was impossible to do so. Students

were enormously angry at the prison guards for comments they had made about inmates "conning" the doctor. Students identified deeply with the prisoners' complaints that the health care provided them was inadequate. They had witnessed what they felt were abuses of patients by "the system" and they wanted to know what was being done to change it. Only after these topics were fully dealt with was it possible to dissect the film in a manner consistent with the original instructional objectives. What had happened?

The context and the manner of presentation had changed. These elements will be discussed below, but suffice it to say that the change had heightened the film's potential as an emotionally warm experience. In retrospect it was obvious that the faculty author and film maker, who were both in their thirties, had failed to consider the age of the inmates, which closely approximated that of the medical students. That half of the inmates were black and most of the students were black (only one of the guards was black) contributed an additional element of identification.

Since that initial classroom showing Sick Call has been presented nine times to groups of thirty first year medical students. It has been assigned in the media library with, and without an accompanying instructional guide, and it has been used in class under varying circumstances--as film, as videotape, with lights bright, with lights low or out. The emotionality of the students' response is heightened by in-class viewing as film with the lights out, and minimized by assignment as videotape with instructional guide in the media library. Either way, the instructor now knows to allow some class time for "group processing"--working through the emotions experienced--before attempting to dissect the film from a didactic point of view.

In addition to such "group processing" with the faculty member acting as the group facilitator, during class time, there are two other approaches which the Health and Human Behavior Video Project has used with some success

to achieve the same end. One is to present the emotionally warm film or videotape at the end of class time, and then to discuss it at the beginning of the next week's class. This technique is most appropriate if the class is scheduled at the end of the teaching day, allowing the students to discuss the motion media presentation with one another after class time, without disrupting the next class. The other is to use the model of "group assigned self instruction" as presented above. Both of these approaches allow the instructor to shortcut the amount of time spend on group processing during class time.

This discussion has emphasized the style of the film or videotape as a major variable to consider, but other factors are of course important. Length is a vital consideration, as is technical quality, and the extent to which the content is one dimensional or complex. Many other attributes of the content need to be weighed, including the currency of the facts, the level of difficulty, and whether the implied audience is medical students or physicians. Since the informal experimentation conducted under the auspices of the Video Project did not consider such matters, they will not be further discussed here.

2. Variations in the Manner of Presentation.

Four factors were experimented with in this category: film vs videotape, lighting, self instruction vs classroom presentation, and the presence or absence of faculty surveillance (observation). The first three were alluded to in the example above, but the fourth requires some definition.

Over the course of the informal experimentation with Video Project motion media the factor of surveillance emerged in subtle ways through small incidents which could be given various interpretations. For example, the Project routinely collected evaluation sheets on all of its media checked out of the media library, not only to monitor use levels and keep a running tabulation of student satisfaction,

but also to collect data on statistical differences between the students' pretest and posttest scores. One of the medical student part-time assistants on the Project confided in a staff member, "Maybe I shouldn't be telling you this, but a lot of students cheat on those evaluation forms. I wouldn't base any serious decisions on the results!" She pointed out that the student's name is asked for on the evaluation sheet, and that this alone was sufficient to lead some students to check the answer key before answering posttest questions. Some students also were observed checking the key before answering the pretest items.

The instructional packages (videotape with instructional guide) were originally evaluated in the presence of the research and evaluation staff of the Project--a fact which discouraged "cheating" (looking up the answers on the answer key in the instructional guide prematurely). An experiment was conducted to diagnose the precise nature of the "cheating" occurring in the course of self-instruction. A class of thirty was given a quiz identical to the posttest of a package assigned as self instruction. The uniformly high scores revealed that if "cheating" had occurred it took the form not of rote copying of the answers from the key onto the evaluation form, but of reading through the test items with the answer code in hand, and then filling in the answers. In the end, the students who bothered to go to the media library library in the first place were learning the correct answers.

From a pedagogic point of view, what was wrong was not the students' "cheating", but the request for the students' name on what could have been an anonymous evaluation form. Even the remote possibility that the faculty member would bother to link up a name to a test score destroyed the spirit of self instruction for some students.

Surveillance may take place not only of the students' written work,

but of their in-class responses to motion media presented. This was demonstrated in another experiment. A group of student volunteers was evaluating a series of videotapes on The Differentiation of Gender Identity in a special evening session. The television monitor was large and the image bright and clear, with no reflection or glare from overhead lights. When the instructor sat near the door and observed the students' response to the lecture and cases which appeared on the screen, the students evidenced discomfort and one asked that the lights be turned out. Later the same evening, the instructor left the room and the students chose to view the remainder of the videotapes with the lights on.

Interviews with these and other students who had been present for the screening of films and videotapes at varying light levels suggest that in very low light students are free to respond, not only without the surveillance of faculty members, but also unobserved by one another. Students feel freer to arrange their bodies to sit in a comfortable position, to make use of their vocal cords, to respond with their facial muscles to the emotions they feel, without undue concern for decorum. A psychiatrist might say that a certain amount of regression occurs. What is certain is that the range of permissible human responses to motion media is broader in the dark.

To compare the value of self instruction vis a vis classroom presentation of the same materials another experiment was designed. Sex Differentiation is a lecture illustrated with charts, graphs, photographs, and a brief film. It affords the student who has completed most of the preclinical coursework an opportunity to pull together and review prenatal developments in the differentiation of biological sex. When initially evaluated students gave it a very high rating, but requested that the text be transcribed and added to the instructional guide, to eliminate the necessity for note taking. This

was done, and even so students using Sex Differentiation in the media library were observed viewing the videotape more than once, to master the content to their satisfaction. As expected, when shown during class time this videotape caused anxiety and frustration. Analysis of pretest and posttest scores confirmed that little learning had occurred in class by comparison with the media library. What was missing was the element of student control over the pace of learning. At the end of class the students were told that they could view the videocassette in the media library on their own if they wished, and a fourth of the class eventually did so, even though they were also provided with a copy of the transcript. In subsequent years the program was assigned as self-instruction.

3. Characteristics of Students.

Those characteristics of students which have been studied by the Health and Human Behavior Video Project include sex and ethnic group identity, attitudes towards course content, and attitudes towards the use of audiovisual media in medical education.

Male Physician/Female Patient is designed as a trigger tape. It presents a series of very brief autobiographical accounts by women of incidents which occurred in the offices of male physicians. The stories were selected from more than a hundred fifty collected on audiotape, and each was adjudged by a student selection panel composed of men and women to be illustrative of "sexism" in medical practice. The women tell their stories looking directly into the camera. They are shown in medium closeup, against a dark and neutral background, and a great impression is made by their eyes and their facial expressions as they tell their stories. Between stories the screen fades to black to allow the instructor to turn the cassette off and begin discussion.

Evaluation early led to the finding that women medical students responded differently than did men. The men said, in effect, "You should show this to

middle aged doctors in practice, not to us," or "We wouldn't do anything as naively sexist as that!" Women responded saying, "I could add a few stories to that videotape," and "Oh yes the men in the class do need to pay attention to the videotape!"

Experimentation eventually led to a format for presentation not as a trigger tape (with class discussion following each story presented) but rather as a documentary, shown without interruption. The blank spaces between the stories let the incidents "sink in" and permitted the students to make a psychological transition from one story to the next. At the conclusion it was then possible to ask first men students to identify those stories which were the best and worst examples of sexism in medical practice, and discussion began. In this manner the women in the class were seldom placed on the defensive as a group, and it quickly became evident that both men and women had varying backgrounds with respect to their conception of women's roles and women's rights in the doctor-patient relationship.

Ethnic group identity as another student characteristic emerged in several ways. One of the early responses from students asked to evaluate the series on The Differentiation of Gender Identity came from the black students present, several of whom made it clear that the classical music (Bach) which accompanied the titles and credits would not have been their choice. They suggested that they would respond more favorably to an identifiably black musical sound--jazz, blues, gospel, or whatever.

The first completed film with soul music over the titles was Housing Discrimination as a Stressful Life Event. It features an interview with an attractive and articulate young black couple who had been discriminated against, and who subsequently hired a lawyer and won a settlement. Intercut with that interview are comments on life stress and illness, and on racial discrimination as a source of stress, by the senior author of the film, William Grier, a

black psychiatrist and co-author of Black Rage.

Housing Discrimination had initially been evaluated by a select group of medical students as a videocassette with an instructional guide containing a reprint of an article by Holmes and Masuda from Psychology Today. It was received favorably, but unemotionally. Shown as film to a class of more than a hundred medical students, and without the instructional guide, Housing Discrimination produced a totally different response.

To the surprise of faculty members present many students either cheered or made approving comments aloud when at the opening of the film the Meharry logo appeared on screen accompanied by a distinctly black and bluesy sound. The class was noisily approving of much of the content of the film. It cheered again when the young woman on screen said that having been discriminated agsinst in the housing market she could now understand why black people go crazy every day and shoot dozens of white people.

The film was intended, from the beginning, to arouse in the audience an awareness of how profoundly stressful an experience of housing discrimination could be, leading to emotional or somatic responses which the physician should recognize as such. The couple who appeared on film were selected from more than twenty five who were interviewed in an ongoing research project, precisely because of the age of the couple, which was the same as that of the medical students. As intended, this did heighten the identification between the audience and the characters in the film; apparently for a mostly black audience the music selected to begin the film also contributed to the effect.

Not anticipated was the feeling, contained in a written but anonymous course evaluation some weeks later, that the film was "racist." Presumably the evaluation came from a non-black student. The interracial group of faculty members who had coauthored the film later discussed this response with the class as a whole, and with individual class members, black and white. It was

decided that after future showings of the film an attempt would be made, in class, to draw out the feelings of the non-black students, and to use the occasion to encourage students of all backgrounds to anticipate how they would respond, as physicians, to anger on the part of a patient--racial anger, or anger from whatever source. It was decided to modify the instructional guide placed in the media library in order to bring to attention this same aspect of the film, and of the student's possible response to it.

Once again, as in Sick Call, students could not relate intellectually to the didactic content of the film (in this case, the relationship between stressful life events and emotional or physical illness) without first expressing and then recognizing and hopefully working through some of their own emotional responses. Minority students, of whatever ethnic group, may have somewhat different responses to motion media than majority students, and the faculty needs to afford all students an opportunity to share those responses. The resulting discussion can be highly informative, even if the only message learned is that the medical student, as a physician, will need to read his or her own emotional responses, define them, and deal with them in such a way that they do not interfere with diagnosis and treatment. Practice in reading one's emotional responses in the course of medical education provides a way of anticipating what needs to be done with patients.

Other student characteristics considered by the Project were attitudes towards the social and community aspects of illness, towards preventive medicine and psychiatry, and attitudes towards the use of audiovisual media and self instruction in medical education. In two years of research the Project staff found no consistent relationship between these attitudes, as measured on Likert scales, and the students' ratings of individual Video Project audiovisual materials. The interpretation given was that the attitudes measured were attitudes abstractly considered, and had little actual bearing on the

students' response to the audiovisual media presented. The scales, as constructed, did not measure one variable which might have been demonstrably at work, and this was the extent to which the students enjoy learning which transcends the cognitive realm, which evokes a human response.

4. Variations in Instructional Context.

Examples already given illustrate the general theme that the same audiovisual program can be experienced completely differently by students depending upon the context and the manner of its presentation. In one context a program may be enthusiastically accepted, and in another, fought or rejected. In one context it may call forth an intellectual response, and in another, an emotional response.

Which aspects of context are most important to consider? In one sense the answer can only be given in psychological terms. That is, it is important to consider anything which may serve as a barrier to, or facilitator of, the individual student's learning. The list of factors which can thus be weighed and considered, in addition to those discussed above, seems almost limitless: architecture, the arrangement of furniture, the time of day, the number of students in the class, the reputation of the faculty member and the department, the sex and age and ethnic group affiliation of the people present, whether the course is elective or required, the students' previous experience with audiovisual media, and any pressures, concerns, and anxieties weighing on students' minds, from whatever source (family, the news of the day, tests in other course, bodily needs and desires, etc.). The faculty member has little or no ability to influence most of these, however, and tends to take the learning environment for granted.

An analogy may be drawn between the faculty member teaching behavioral sciences and the physician practicing medicine. The contemporary physician is expected to pay close attention to the behavioral aspects of health and

illness. He, or she, is instructed not to take for granted the patient's personality, family, job, subculture, or physical environment. The physician is expected not to take for granted his or her own history taking and interviewing skills, his or her own behavior before, during, and after a gynecological or a rectal exam. Medical students respond to these expectations by complaining that as physicians they will have only a limited amount of time in which to treat the patient, and that in any event if they did become concerned with the social and economic aspects of the lives of their patients they could do little to change things anyways.

But just as, in fact, behavioral sciences faculty do not expect practicing physicians to perform miracles in treating the sociocultural and psychological aspects of illness, so also the behavioral scientist faculty member need not feel called upon to create a Utopian environment for learning every class hour. On the other hand, the behavioral scientist who teaches medical students without any concern for the sociocultural and psychological aspects of learning is hardly providing an apt role mode. It is incumbent on the teacher of medical behavioral sciences to do what can be done to structure the setting of learning so as to create a positive attitude towards learning and to make learning as efficient and pleasurable as possible.

D. Some Conclusions.

Some of the films and videotapes produced at Meharry under the auspices of the Health and Human Behavior Video Project have been intended to evoke an emotional response, and they have in fact led to animated discussion, both in class and after. Sometimes the discussion could hardly admit of light until the heat died down. More than once, medical students have been sufficiently aroused by the learning experience that they have brought their

spouses to the media library to see a videotape. Not infrequently, and without prompting, medical students have confessed to faculty members in private, or to students and faculty alike in the course of a seminar, that they have been moved to reexamine basic attitudes, including their attitude towards how they should interact with patients.

Medical students feel strongly about the kind of doctors they want to be. They are acutely aware of their need to develop abilities, personally as well as professionally, to relate to the problems presented them by their patients.

Precisely for this reason audiovisual resources in the medical behavioral sciences have the potential to communicate not only didactic information but also to arouse empathic responses, feelings of revulsion or anger, care or concern.

Most audiovisual media in the medical behavioral sciences will not be as "warm" or "visual" in style as many of the programs produced by the Health and Human Behavior Video Project. They will be intended to instruct mainly in the cognitive realm. But the students' response will be in terms of attitudes, emotions, and aesthetic sensibilities, in addition to the cognitive response, rationally considered.

CHAPTER IV

APPROACHES TO THE CREATION OF MOTION MEDIA FOR MEDICAL BEHAVIORAL SCIENCES

Motion media intended for use in teaching physicians or medical students about the behavioral aspects of health and illness are likely to require a considerable investment of energy, time and talent and for this reason--financial considerations aside--the faculty member who wishes to create his or her own film or videotape needs to consider the many possibilities. What are the objectives uniquely suitable to the use of motion media? What approaches to the creation of motion media for the medical behavioral sciences are most and least likely to succeed?

The experience of the Health and Human Behavior Video Project at Meharry Medical College provides a basis for offering some answers to these questions. Over the course of forty months ending in October, 1976, the Video Project evaluated seventy eight proposals for instructional films or videotapes in the medical behavioral sciences. Fifty six were begun, of which fourteen remained in some stage of production without being completed to the satisfaction of the production supervisor and/or the evaluation and instructional design specialist. Of the forty two which were brought to a conclusion, six were found to be acceptable on initial evaluation and thirty six underwent

revisions, minor or major. Finally, when judged against criteria developed for off-campus distribution, twenty of the programs survived the technical, instructional design, and content review.

A number of the most time consuming and costly programs begun by the Health and Human Behavior Video Project did not survive student and peer review. Yet some of the least expensive productions were among the most successful, and could easily be replicated at another medical school, given similar objective and only the most modest staff and equipment. The discussion which follows presents the principles which seem to have been operative in accounting for success or failure. It begins with a consideration of the rationale for creating motion media to educate in the medical behavioral sciences. It then presents a number of the specific approaches which have been the most successful, and the least successful, in the experience of the Meharry Video Project. Finally, it suggests a few approaches which were not tried but which seem worthy of consideration.

Most faculty members in medical schools drawn to filming or videotaping for educational purposes can express quite clearly what they want to do, and why. What they have not thought about carefully is whether the motion media are in fact the best approach to fill their instructional purposes, given the alternatives and the costs involved. Faculty members frequently request, for example, that a visiting lecturer or consultant be recorded, not on audiotape but on film or videotape, when a transcription of the audiotape, after editing, would be the more useful record to have. Unlike film or videotape, a typescript can be inexpensively duplicated, and thus it can be handed out to students--and skim read, or underlined. As film or videotape it requires a projector or videotape playback unit with TV monitor. It must be seen from beginning to end at the pace of the original speech--for slower than the average student's reading speed. And what is recorded is not only the speaker's

thoughts but also any peculiarities of appearance, gesture, and speech, and these may in fact serve as considerable distractions to learning.

What are the circumstances when instructional films or videotapes ought to be made? The answers considered most important by the Video Project came in response to the following questions.

1. Is there a film or videotape already in existence which will meet the educational need, or which could readily be modified and found suitable?

2. Is the content visually stimulating, interesting, such that it will maintain the viewer's visual interest?

3. Could the instructional aims be filled less expensively through use of another medium of instruction? At least the following should be considered: printed handouts, tape/slide presentation, field trips, slide illustrated lecture, printed self-instructional guide, live clinical case presentation.

4. Will there be a continuing on-campus demand for the film or videotape once created? An off-campus interest?

5. Is the idea simple enough that it can be contained in a presentation of no more than twenty to twenty-five minutes?

6. Are the necessary resources at hand? To be considered are faculty time and expertise; equipment, money, and talent for production; and instructional design and evaluation skills.

7. Would there be cost savings affected by making the videotape or film? It should be noted that some of the alternatives themselves may be expensive if the costs of the faculty time, administractive support time, and materials are considered.

8. Is there a unique medical case or sociocultural phenomenon which deserves to be recorded for posterity?

9. Is there some aspect of the educational objectives which specifically requires visualization in motion media terms? Examples would include the demonstration of techniques of interviewing or physical examination, nonverbal communication, the use of motion media to evoke an atmosphere or mood, or the depiction of a subject which would be intrusive if presented live to students.

10. Will it increase the student's control over the learning process? Videocassettes in the media library can be used as self instruction and can therefore increase the student's ability to influence the pace and sequence of learning. Instruction is thus individualized, and this may be an important objective.

11. Will it increase the amount of learning which occurs? Motion media have the potential for immediacy, for intensity, which can result in learning involving more of the senses, and educational theory suggests that this <u>may</u>

reinforce what is learned, or make it more enjoyable.

The answers to such questions may suggest that motion media are worth producing, and at this point there should be systematic evaluation of the possible forms or designs such media can assume. Before considering several of the alternatives, however, there are other aspects of the Video Project experience which should be considered, for they were closely associated with the success of the programs produced.

The first is problems of faculty collaboration. For motion media in the behavioral sciences to be effective, they often require close communication between behavioral scientists and physicians, at the level of authorship, or of selection of patients for presentation, or of review of the final product. Genuine collaboration between social scientists and physicians was difficult to achieve at the authorship level on the Video Project. It apparently takes more time than most faculty members have. It also, in the case of the Video Project, because of the requirement of student evaluation of the product, meant a willingness to risk failure in front of students. Only a minority of the films and videotapes created at Meharry have seen extensive M.D./behavioral scientist collaboration. Many of the most successful have involved collaboration at the authorship level, or at some other phase of production and evaluation. Those produced by behaviorally sophisticated physicians or medically experienced and clinically sophisticated behavioral scientists have also been well received. Many of the programs which failed, or received lukewarm reception by the students, were prepared by behavioral scientists who did not have much experience teaching medical students, experience in the medical setting.

The second factor is cost. To make educational film on a commerical basis costs about $1,000 a minute, but a skilled film maker can in certain circumstances produce a quality film for a fraction of that amount. Videotape,

once the equipment itself is purchased and the engineering staff is hired, can be far less expensive. Several of the most costly programs produced by the Video Project, or left incomplete, failed not for want of production resources, fiscal or personal, but because of the complete inadequacy of the original instructional design, or the unavailability of the faculty member to contribute his or her expertise needed. The programs which were least expensive, whether on film or videotape, had the most elegent instructional purpose, the most elementary form, design.

Several concepts proved especially expensive, and the end products were received with varying enthusiasm. The first is the documentary. It is difficult, if not impossible, for the university-based film production or television production unit to prepare a product which will look as polished as a commercial product. The cost of television shows produced for educational or commerical TV is quite beyond the means of educational motion media makers, and an attempt to imitate the appearance of such productions, without the expenditure of resources, is almost bound to fail. Productions which are ambitious beyond the means of the university based production unit are bound to look amateurish. They will consume much energy, to little effect.

The second concept which proved risky on the Video Project was the illustrated lecture. Unless the lecture revolves entirely around a visually interesting topic, an audiotape or written transcription (with printed illustrations) will be better received by students. Again, even heroic efforts to create fancy titles, sets, charts, graphs, illustrations, and acted and narrated sequences, to make a lecture more interesting, are bound to look amateurish by comparison with national television or commercially produced film. Far better to use clever and inexpensive production approaches which do not imitate the commerical product. Graphics or titles carefully drawn and photographed on a blackboard, in chalk, are better looking in instructional

motion media that a commercially produced title which is crooked, or which is out of character with the rest of the film or videotape.

Approaches which seem the most likely to succeed, in the Video Project's experiences, include the following:

1. Variations on the Trigger Tape. Several of these have been discussed in the previous chapter, and they will not be further considered here.

2. Single Concept Self Instruction. Frank Penta and his colleagues at the Health Sciences Consortium have adapted this videotape method to many types of content.

3. Health Ethnographic Films or Videotapes. This is an attempt to explore patients' views of their folk medical practices, and the meaning they have to them.

4. Intensive Immersion. The Video Project has approached this notion in a seminar on the doctor/patient relationship, with positive results.

5. Media Modification. Existing media are adapted from commerical newscasts or TV features, or from educational films developed for other purposes.

6. Clinical Case Presentation. Many of the successful Video Project programs involve clinical case presentations, usually in the patient's home or in the clinic or hospital, but sometimes recorded in the TV studio.

These approaches need to be tried, and evaluated. But they should not be used to replace actual clinical experience with live patients, or family visits, or community involvement. At least this is the strong concensus of the Meharry students and faculty who have participated in Video Project.

It must be admitted that little is known about the impact of audiovisual media on the process of medical education, on the behavior of physicians in the long run. That is the next phase in the evaluation of motion media in the medical behavioral sciences--the development of indices whereby the impact on actual clinical behavior can be measured. In the meantime, it is entirely appropriate to justify the effort and expense of motion media on a basis of filling a need which is didactic, or which will increase the students' motivation and the pleasure of learning.

FOOTNOTES

[1]Those in most widespread use included the following:

Samuel W. Bloom, The Doctor and His Patient. N.Y.: Russell Sage Foundation, 1963.

Alfred M. Freedman and Harold L. Kaplan (eds.), Human Behavior: Biological, Psychological, Sociological. N.Y.: Atheneum, 1972.

Frederick R. Hine, et. al., Behavioral Science: A Selective View. Boston: Little-Brown and Co., 1972.

Nathan Talbot, et. al., Behavioral Science in Pediatric Medicine. Philadelphia: Saunders, 1971.

[2]Such evidence as exists is contained in two governmental reports:

National Institute of Child Health and Human Development, Behavioral Sciences and Medical Education: A Report of Four Conferences. DHEW Pub. No. (NIH) 72-41. Washington, D.C.: Superintendent of Documents, 1972.

Donald Kennedy, Evan Patishall, and Richard Fletcher, Teaching Behavioral Sciences in Schools of Medicine. Vol. I: Summary Report. Vol. II: Empirical Studies. Vol. III: Behavioral Science Perspectives in Medical Education. National Center for Health Services Research and Development Contract No. HSM 110-69-211, 1972.

[3]Patricia M. Randels, et. al.(eds.), The Psychiatry Learning System: A Multimedia Self-Instructional Course in Basic Psychiatry. Charleston: Medical University of South Carolina, 1974.

[4]Gerard J. Hunt and Allen S. Mondell, Social Factors in Health Care: An Evaluation of Selected Films and Videotapes. University of Maryland Department of Psychiatry, The Institute of Psychiatry and Human Behavior, 1972.

[5]D. G. Langsley, et. al., Mental Health Education in the New Medical Schools. San Francisco: Jossey-Bass, 1973.

[6]The latter approach characterizes the work of the Video Project's Production Chief, Jacob Eleasari, so it is no coincidence that many of the Project's films and videotapes represent variations on this theme.

[7]See Appendix B for a complete listing of Video Project programs.

APPENDIX A

HEALTH AND HUMAN BEHAVIOR VIDEO PROJECT

STAFF, CONSULTANTS, STUDENTS

Staff Members

James McCorkel, Project Director 1973-6
Patricia Mitchell, Project Coordinator 1973-4
Belinda Biscoe, Instructional Design and Evaluation Specialist 1974-6
Ernest Rhodes, Research and Evaluation Specialist 1973-4
Christine Abramowitz, Research and Evaluation Specialist 1973-4
Eileen Palmer, Administrative Assistant 1976
Mattie Sevier, Admistrative Assistant 1973-5
Jacqueline Dennis, Administrative Secretary 1974-6
Ella Crafton, Administrative Secretary 1973-4
Gordon E. Brown, Producer/Director 1974-6
Ami Ron, Producer/Director 1974-6
Michael Saunders, Producer/Director 1975-6
Janet Tarver, Producer/Director, 1974-5

Consultants

National Advisory Council

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Evan Patishall, Jr., M.D., Ph.D., Chairperson, Department of Medical Behavioral Sciences, Pennsylvania State University School of Medicine at Hershey
Robert Turnbull, Video Systems Consultant, National Medical Audiovisual Center, National Library of Medicine, Atlanta, Georgia

Production and Program Consultation

Jacob Eleasari, Educational Film Maker, Production Chief, Health and Human Behavior Video Project, 1974-6
Elmer Friman, Video Systems Engineer, Indiana University School of Medicine, Indianapolis, Indiana
Carroll Bourg, Ph.D., Sociology Department, Fisk University, Nashville, Tennessee
Paul Miller, M.D., Psychiatrist, University of Nevada School of Medicine at Reno
Eldon Ullmer, Ph.D., National Medical Audiovisual Center, Atlanta, Georgia

Student Trainees and Assistants

Dennis Akutagawa
Jane Cagan
Winston Griner
Antoinette Gross
Gerome Gross
Yolanda Hughet-Vaughn
Rubin Ruiz
Alvin Singh
Kenneth Spaulding
Dora Taylor
Andrew Meyers

APPENDIX B

A LISTING OF TITLES, AUTHORS, AND PRODUCERS OF VIDEO PROJECT PROGRAMS

Author and Department	Title of Program	Producer	Format
Beale, Gary, Ph.D. Psychiatry	Kawaida: A Mental Health Program for Black Children	Michael Saunders	16mm
Bernard, Louis, M.D. Surgery	Examination of the Normal Male Abdomen, Part I,II,III	Ami Ron	TV
Bernard, Louis, M.D. Surgery	Examination of the Female Abdomen	Ami Ron	TV
Bernard, Louis, M.D. Surgery	Examination of the Obese Abdomen	Ami Ron	TV
Bernard, Louis, M.D. Surgery	The Surgical Abdomen	Ami Ron	TV
Biscoe, Belinda, M.A. Psychiatry	Female Physician/Male Patient	Gordon Brown	TV
Biscoe, Belinda, M.A. Psychiatry	Time is Winding Up, Part I, II III, IV, V	Belinda Biscoe and Jacob Eleasari	16mm
Brown, Kermit, M.D. Medicine	Approach to the Cardiovascular Patient	Ami Ron	TV
Carter, Annie, M.S. Nursing Education	The Health Care Team	Gordon Brown	TV
Carter, Richard, M.D. Family and Community Health	Contracting for Change	Jacob Eleasari	16mm
Carter, Richard, M.D. Family and Community Health	Community Medicine: A Rural Health Fair	Jacob Eleasari	16mm
Coopwood, William, M.D. Psychiatry, and John Arradondo, M.D., and Lynne Lennox, M.A., Family and Community Health	Management of Psychiatric Emergencies	Lynne Lennox	TV
Dennis, Ruth, Ph.D. Psychiatry	Black Folk Medicine	Gordon Brown	16mm
Dennis, Ruth, Ph.D. Psychiatry	Black Homicide	Gordon Brown	16mm
Dennis, Ruth, Ph.D. Psychiatry	Black Suicide	Gordon Brown	16mm
Edwards, Marion, MSSW Psychiatry	The Art of Interviewing	Michael Saunders	TV
Fairweather, Max New York State Department of Mental Hygiene	Psychiatry in the Public Sector: Perspectives of Minority Students	James McCorkel	16mm
Foster, Henry, M.D. Obstetrics and Gynecology	The Gynecologic Examination Part I, II	Ami Ron	TV
Grier, William, M.D. and James McCorkel, Ph.D. and Ruth Dennis, Ph.D. Psychiatry	Housing Discrimination as a Stressful Life Event	Gordon Brown	16mm
Hardin, Carolyn, Ph.D. Psychiatry	Sex Differentiation	Ami Ron	TV

Author and Department	Title of Program	Producer	Format
(cont'd)			
McCorkel, James, Ph.D., and Ruth Dennis, Ph.D. Psychiatry	Male Physician/Female Patient	Jacob Eleasari	TV
McCorkel, James, Ph.D. Psychiatry, and Gladys Williams, M.D., Medicine	Poverty and Compliance	Jacob Eleasari	16mm
McCorkel, James, Ph.D. Psychiatry	The Physician and the Male Homosexual Patient, Part I, II	Ami Ron	16mm
McCorkel, James, Ph.D. Psychiatry	Sick Call	Jacob Eleasari	16mm
McGruder, Charles, M.D. Obstetrics and Gynecology	The Gynecologic Interview	Gordon Brown	TV
Money, John, Ph.D. Johns Hopkins University	The Differentiation of Gender Identity, Part I, II, III, IV, V	Ami Ron	16mm
Phillips, Joseph, M.D. Psychiatry	Sickle Cell Anemia, Part I, II, III	Jacob Eleasari	16mm TV
Schuftan, Claudio, M.D. Family and Community Health	Inquiry into Health Delivery Systems	Jacob Eleasari	16mm
Taylor, Willie, M.A. Psychiatry	Programs for Aging	Gordon Brown	TV
Weidman, Hazel, Ph.D. University of Miami	Falling Out	James McCorkel	16mm